

WILDLAND FIRE RISK ASSESSMENT

Geographic Information System (GIS) technology, input from local fire districts, and on-site home assessments were used to assess the overall risk of wildfire in Bonner County. Fire district personnel identified areas they determined to be of high priority in need of hazardous fuels treatment work. The **BONFIRE** program manager attended local Fire Chief's meetings to solicit input regarding their concerns relative to interface fire issues in relation to preparedness. Issues and concerns of the chiefs are included in the following risk assessment.

Geographic information technology was then used to independently validate the anecdotal approach of the fire agencies. The GIS was used to identify areas at high risk to wildfire based on factors commonly used by fire agencies to assess fire risk. Values at risk were then added to the GIS based risk assessment to determine areas of high risk and high value. These areas were then compared to the high priority areas identified by the fire agencies.

In addition to this methodology, a risk rating method for individual dwellings was developed for use during the mitigation phase of the wildland urban interface mitigation program.

HIGH RISK AREAS IDENTIFIED BY FIRE DISTRICTS

The fire districts were asked by the Bonner County Wildland Fire Mitigation Committee to assess the risk of wildfire in their districts and identify areas at high risk. Housing density, access, topography and surrounding vegetation were used by the fire districts to determine which locales in the county are at the highest risk from wildfire. As a consequence, nine areas in the county were established as high risk by the district Fire Chiefs. The areas identified are:

A) An area which includes portions of the Westside Fire District, Northside Fire District and the City of Sandpoint has been identified as high risk. The area is approximately 2000 acres and bounded by Baldy Road on the south, Selle Road on the north and lies west of the BNSF railroad tracks. Using estimates for population density (300 people/sq.mi.) and the number of people per housing unit (2.49 people/housing unit) found in the 2000 census data, it is estimated there are 900 people and 361 homes within the area described.

Also contained in the census data is the median home value. From this information one can estimate the collective value of the homes within a given area. Multiplying the number of homes (361) times the median home value (\$124,500) gives an estimate of the combined value of homes within the area.

Based on this analysis there are approximately 900 people and \$44.9 million in property at risk to wildfire within the area. Although specific locations will vary, this

same procedure was used to provide an indication of population, number of homes, and value for the rest of the areas described below.

B) An area of approximately 1800 acres of wildland urban interface in West Oden Bay and Sunnyside Area is considered to be at high risk by the Northside Fire District. There are approximately 500 people and 200 homes, with a combined value of \$24.9 million, at risk to wildfire in this area.

C) Nineteen hundred twenty (1920) acres at lower Riser Creek and nearby Sam Owen Peninsula were rated as high risk. There are approximately 300 people and 120 homes, with a combined value of \$14.9 million, at risk to wildfire in this area.

D) In the City of Sandpoint two areas were identified as high risk by the Sandpoint City Fire Department. One area is along Sand Creek and the other adjacent to Chuck Slough. The combined areas encompass about 640 acres. There are approximately 300 people and 120 homes, with a combined value of \$14.9 million, at risk to wildfire in this area.

E) The Spirit Lake Fire District identified the Treeport area, Blanchard cutoff Road, Wild Meadows and Stoneridge as high risk areas. The total area is approximately 3200 acres. There are approximately 500 people and 200 homes, with a combined value of \$24.9 million, at risk to wildfire in this area.

F) A secondary egress off the west side of Schweitzer Mountain was identified as a high priority by the Schweitzer fire department. The need for a fuel break along Schweitzer Mountain Road was also identified as a high priority. The fuel break would involve fuels treatment on about 120 acres.

H) The West Settlement Road area near Priest River was identified as a high risk area by the West Pend Oreille Fire District. Approximately 2560 acres are included in this area. There are approximately 800 people and 321 homes, with a combined value of \$39.9 million, at risk to wildfire in this area.

I) The Hoo Doo Loop area in western Bonner County has also been identified as being at high risk and covers about 2560 acres. There are approximately 400 people and 160 homes, with a combined value of \$19.9 million, at risk to wildfire in this area.

J) An area of 640 acres around the communities of Coolin and Cavanaugh Bay are also rated at high risk. There are approximately 200 people and 80 homes, with a combined value of \$9.9 million, at risk to wildfire in this area.

In the high risk areas listed above the estimated population is 3720 and the combined value of homes is approximately \$194 million.

Even though there are a large number of homes to be found in the areas identified as high priority, not all of them are necessarily at high risk. A home on flat ground with little or no native vegetation adjacent to it may not be at high risk. Because of limited

and uncertain funding, the first goal of the mitigation program should target high risk homes in the highest priority areas. In order to accomplish this goal, a method was developed to help sort out the individual homes with the highest risk. The method used for evaluating the risk to individual dwellings is discussed later in the plan, under the heading “**Evaluating Individual Homes For Risk.**”

USING GIS TO ASSESS RISK

In reviewing information pertinent to where the community is in the most jeopardy from potential forest fires, we went from the most general information to the most specific. The final pictures we get from a federal analysis are maps of where we can expect fires that would cause the most damage to communities (Communities at Risk), and where we can expect fires that would be the hardest to control (crown fire potential). Using federal database information and local Bonner County Assessor data on the value of properties in each square mile, we get a picture of where the greater value is located and where most fires have historically started. Local fire districts also outlined the areas within their district where they feel the most danger lies.

Each of these steps brings us closer to where hazardous fuels treatment work should be concentrated on the ground. These steps will also aid in the review of what has been done and the evaluation of how effective it has been in protecting the community. Each avenue of analysis provides checks and balances to the others. If fire districts say “Start here,” we are going to start there. But we are also seeing dangers outside of current fire districts. This large-scale analysis generally confirms that the priority areas chosen by the fire districts are valid.

Fire naturally regulates itself. It is not likely to burn the same area for several years after the last burn. But in the process of becoming a mature forest, timber stands will quickly reach stages where the fire danger is high again. Our suppression efforts suffer the same fate. Without constant maintenance and observation, they lapse into high risk again. The current analysis is the beginning of a body of knowledge about how Bonner County can best protect itself against wildfire. It is certainly not the end.

The Components

The federal data used for this analysis came from the *National Fire Plan Cohesive Strategy Team, Northern Regional Division for North Idaho and Montana*. The team was spearheaded by the Flathead National Forest. Lead investigator for the Flathead Forest was Don Krogstad. Additional analysis related to population density was done by Jim Schumacher of the Wildlife Spatial Analysis Lab at The University of Montana in Missoula.

The team gathered base data in three categories: 1) The **status** of the current land cover, 2) the **risk** for occurrence of fire and 3) the **opportunity** to mitigate dangers to the population and the environment. From these components, they developed data themes that answered a series of questions about the status, risks and opportunities for wildfire